11.4 $a_n = a_1 r^{n-1}$ $S_n = \frac{a_1(1-r^n)}{1-r}$ $S_n = \frac{a_1 - r \cdot a_n}{1-r}$

Day 1

p597 15-21 odd 27, 30 ~~35~~ ~~41, 43, 47~~

15. $a_1 = 2$ $r = 3$

$a_6 = 486$

$S_6 = \frac{2 - 3(486)}{1-3}$

$= 728$

17. $a_1 = 1296$

$a_n = 1$

$r = -\frac{1}{6}$

$S_n = \frac{1296 - \left(-\frac{1}{6}\right)(1)}{1 - -\frac{1}{6}}$

$= 1111$

19. $a_1 = 4$ $r = -3$

$n = 5$

$S_5 = \frac{4(1-(-3)^5)}{1--3}$

$= 244$

21. $a_1 = 162$ $r = \frac{1}{3}$ $n = 6$

$S_n = \frac{162\left(1-\left(\frac{1}{3}\right)^6\right)}{1-\frac{1}{3}}$

$242\frac{2}{3} = \frac{728}{3}$

27. $a_2 = -36$ $n = 7$

$a_5 = 972$

$a_n = a_1 r^{n-1}$

$972 = -36 r^{5-2}$

$-27 = r^3$

$-3 = r$

$a_1 = 12$

$S_7 = \frac{12(1-(-3)^7)}{1--3}$

6564

30. $S_{30} = \frac{.01(1-2^{30})}{1-2}$

$10,737,418.23

35. $\sum_{n=1}^{9} 5 \cdot 2^{n-1}$ $\quad S_9 = \frac{5 - 2 \cdot 1280}{1-2}$

$a_1 = 5$

$a_9 = 1280$

2555

41. $S_n = 165 \quad r = -\frac{2}{3}$

$a_n = 48 \quad a_1 = \_\_\_$

$$165 = \frac{a_1 - \frac{2}{3}(48)}{1 + \frac{2}{3}}$$

$$165 = \frac{a_1 + 32}{5/3}$$

$$275 = a_1 + 32$$

$$243 = a_1$$

43. $S_n = -364 \quad r = -3 \quad n = 6 \quad a_1 = \_\_\_$

$$-364 = \frac{a_1(1 - (-3)^6)}{1 - -3}$$

$$-364 = \frac{a_1(-728)}{4}$$

$$-1456 = -728 a_1$$

$$2 = a_1$$